

Patent Claims

1. Illuminating and irradiating unit for ophthalmic instruments, comprising an illumination source, means for generating specific illumination patterns and/or profiles and provided with means for coupling light from the illumination source into the parallel beam path of the observation system of the ophthalmic instrument.
2. Illuminating and irradiating unit according to claim 1 which has, in addition, a monitoring unit for monitoring the radiation dose, for recording the irradiation patterns, and for registering the irradiated positions.
3. Illuminating and irradiating unit according to at least one of the preceding claims, wherein the monitoring unit has one or more interfaces for transferring data.
4. Illuminating and irradiating unit according to claims 1 to 3, wherein the illumination source generates narrow-band light in the short-wavelength range, preferably around 365 nm.
5. Illuminating and irradiating unit according to claims 1 to 3, wherein the illumination source generates narrow-band light in the long-wavelength range, preferably around 690 nm.
6. Illuminating and irradiating unit according to at least one of the preceding claims, wherein optical filters, diaphragms and/or optoelectronic light modulators with a control unit are used as means for generating specific illumination patterns and/or profiles.
7. Illuminating and irradiating unit according to at least one of the preceding claims, wherein a beamsplitter which is used for coupling in light from the illumination source simultaneously serves as a blocking filter to protect the observer from excessive levels of irradiation by the illumination light.
8. Illuminating and irradiating unit according to at least one of the preceding claims, wherein the illumination source is not arranged within the illumination unit but rather as a separate structural component part and is connected to the means for generating specific illumination patterns and/or profiles by means of a light guide.
9. Illuminating and irradiating unit according to at least one of the preceding claims, wherein an eyetracker unit is provided in addition for monitoring the orientation of the illumination patterns on the areas to be irradiated during irradiation and/or for tracking.

10. Illuminating and irradiating unit according to at least one of the preceding claims which is conceived as a modular unit for retrofit installation in the parallel beam path of an ophthalmic instrument.

11. Illuminating and irradiating unit according to at least one of the preceding claims which can be used in combination with subassemblies such as a wavefront measuring unit and/or a topography system and/or an eye axis length measurement device for different ophthalmic instruments.

12. Illuminating and irradiating unit according to at least one of the preceding claims which can be arranged in a shared housing with other subassemblies such as a wavefront measuring unit and/or a topography system and/or an eye axis length measuring device.